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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,583	03/14/2005	Rolf Pinkos	12810-00036-US	7595
30678	7590	09/01/2006	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ LLP			TOSCANO, ALICIA	
P.O. BOX 2207			ART UNIT	
WILMINGTON, DE 19899-2207			PAPER NUMBER	
			1712	
DATE MAILED: 09/01/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/527,583

Applicant(s)

PINKOS ET AL.

Examiner

Alicia M. Toscano

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/10/05 3/14/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
2. Claims 1-7 and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlitter (WO 2003/002631, US Pat Appl 2004/0220381 is used as an equivalent

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English translation) in view of Bohner (WO 2002/002669, US Pat Appl Pub 2003/0176630 A1 is used as an equivalent English translation).

3. The applied references have a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

4. Filing the English translation of said documents would overcome this rejection.

Schlitter discloses a method of producing polytetrahydrofuran (PTHF). Said method comprises a reaction of (a) tetrahydrofuran (THF) (b) at least one telogen

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and/or comonomer. The telogen can be a carboxylic anhydride [0035]. A telogen is equivalent to a comonomer [0005] and as such the use of a carboxylic anhydride is found by Examiner to be both the comonomer and the carboxylic acid of Claim 1. After the reaction is carried out, low molecular weight PTHF and/or THF copolymer having a MW from 200 to 700 dalton is separated out from the higher MW distillate, or final product [0052]. Schlitter does not disclosed the reuse or use of this distillate in the reaction, and thus does not disclose the use of a mixture of the polymer to be prepared by the process, polytetrahydrofuran or a PTHF copolymer, as required by Claim 1.

Bohner discloses a method for the single stop production of PTHF and THF copolymers. Said method comprises a reaction of (a) THF (b) at least one telogen and/or comonomer (abstract). The telogen/comonomer is disclosed to be low molecular weight PTHF polymer (abstract). Bohner teaches the use of a recycled feed of low MW PTHF polymer for a continuous, single stage reaction (Fig 1) however it is further disclosed in [0049] that the polymerization reactor can be operated using a single pass, ie without recirculation of product, thus Bohner teaches the addition of low MW PTHF at the start up of the reaction, as required for Claim 1.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Schlitter the reuse of the low MW PTHF distillate produced and separated during the process disclosed by Schlitter, at the start up of the THF polymerization process, as taught by Bohner, in order to recycle low MW PTHF. Bohner teaches that such a process would increase the overall conversion of THF to PTHF and would decrease the waste removal costs of the THF plant [0014] and [0019].

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The use of the low MW PTHF distillate meets the requirements of using a polymer to be prepared by the process, a polytetrahydrofuran and a tetrahydrofuran copolymer, thus meeting all the requirements of Claim 1.

The MW of the distillate of Schlitter is 200 to 700 daltons [0052], as required for Claim 2. The concentration of the low MW PTHF in the reaction of Bohner is disclosed to be 30 mol%. Examiner finds this amount to overlap with the 20-80 wt% required by Claims 3 and 9, since the process, reactants and products are similar. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Schlitter the use of 30 mol% low MW PTHF in order to optimize the polymerization reaction and to utilize as much of the distillate as possible in order to keep waste removal costs low.

Schlitter discloses the use of 0.1 to 50 mol% of comonomers, or carboxylic anhydride, in the feed, the remaining being THF and Examiner finds this range to overlap with the use of 7 to 80% by weight of THF required by Claims 4, 10 and 11 and the 0.5 to 10% by weight of carboxylic anhydride required for Claims 5, 12, 13 and 14.

Schlitter further discloses the use of acetic anhydride [0035], last line, as required for Claims 15-18 and mixtures of acetic anhydride and a carboxylic acid is disclosed in [0047]-[0048]. The molar ratio of the amount of carboxylic acid in the feed is 1:20 to 1:20000, and Examiner finds this ratio to meet the requirements of up to 3% by weight of carboxylic acid, as required for Claims 19 and 20.

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5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schlitter and Bohner in view of Sigwart (US 5939590).

Schlitter and Bohner include elements of the invention as discussed above. Schlitter and Bohner do not disclose the use of an inert solvent in the polymerization of THF. Sigwart discloses a process for polymerizing THF copolymers. Said process includes the addition of inert organic solvents such as hydrocarbons (Column 7 Lines 29-35). Sigwart teaches the addition of these solvents has advantageous effects in that the phase separation of catalyst and THF is better facilitated. It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Schlitter and Bohner the use of an inert solvent, as taught by Sigwart, in order to optimize the separation of the catalyst residues from the PTHF. This separation step is shown in Fig 1 of Bohner.

### ***Conclusion***

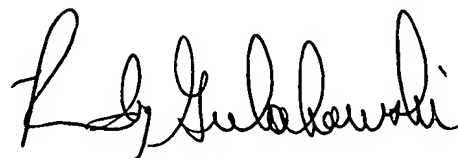
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. WO 9014327 (X reference on ISR) does not disclose adding to the start up mixture of the polymerization reactor either carboxylic acid anhydrides or the polymer that is produced by the polymerization.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Toscano whose telephone number is 571-272-2451. The examiner can normally be reached on Monday to Friday 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AMT



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